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Central Intelligence Agency

Washington, D.C. 20505

DIRECTORATE FOR INTELLIGENCE

17 October 1984

Soviet Economic Growth: On the Road to Recovery?

Summary

Soviet economic growth has improved recently from the slow rates of 1979-82. Overall 1983 growth rose to about 3 percent--roughly 0.5 to 1.0 percentage point above the average trend of our earlier projections for the 1980s. Furthermore, outside agriculture, growth through the first six months of 1984 appears to be continuing at about last year's rate. Agricultural performance is likely to be worse than in 1983, however, because of a disappointing grain crop.

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The upturn of Soviet economic growth in 1983-84 reflects improvement in two major factors that contributed to the preceding slowdown. First, growth of industries producing key basic materials rose sharply after falling for several years and transportation rebounded from its poor 1982 performance. This suggests that relief of supply bottlenecks played a role in the general improvement of growth. Continued stable rates of military procurement in recent years probably also eased demand for materials. Second, overall productivity stabilized after a period of marked decline. We believe that unmeasured increases in hours worked and relief of bottlenecks affected productivity favorably. Improvements in influences like morale, efficiency, and management also may have helped.

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In our judgment, annual growth of Soviet gross national product (GNP) could continue at about 3 percent for another year or two, provided that short-term swings in agricultural output are not large. Growth in this case would be faster than in 1979-82, but slower than in the early 1970s. In the

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absence of sharp agricultural swings, GNP growth could even rise above 3 percent, but probably could do no better than approach 4 percent per year. A number of favorable conditions would have to coincide for growth to reach the high end of this range, however, and it is unlikely that such a high rate could be sustained. [redacted] 25X1

The Soviets will do well, we believe, to average annual rates of increase around 3 percent over the near-term. With growth in labor supply constrained to low rates by demographic trends, the burden of sustaining output growth in the near term would fall on productivity changes and capital growth. We expect the most promising sources of sustained near-term growth to be the same influences that contributed to the apparent stabilization of productivity in 1983: relief of bottlenecks and increases in hours worked. Both sources of sustained growth probably cannot be repeated often, however, leaving productivity to flatten out or decline again as it did in the late 1970s. In the longer term, growth prospects will depend heavily on whether the Soviets develop growth strategies that lead to a return to productivity trends of the 1960s or early 1970s. [redacted] 25X1

[redacted] 25X1

Introduction

Soviet gross national product (GNP) grew about 3 percent in 1983--a preliminary estimate--compared with 2.5 percent in 1982 and 1.9 percent in 1981. Soviet industry, which accounts for over a third of GNP, grew nearly 3 1/2 percent last year, a healthy gain over the 2.3 percent rate in 1982 and the 2.4 percent rate in 1981. 25X1

The outlook for this year is for continuation of the recent improved growth. In the first six months of 1984, industrial production appears on track toward growth at about the rate achieved in 1983. Limited information on the major nonindustrial sectors suggests that GNP outside agriculture also is growing at roughly the pace of 1983. Agricultural performance, however, is likely to be worse than last year because of a disappointing grain crop. 25X1

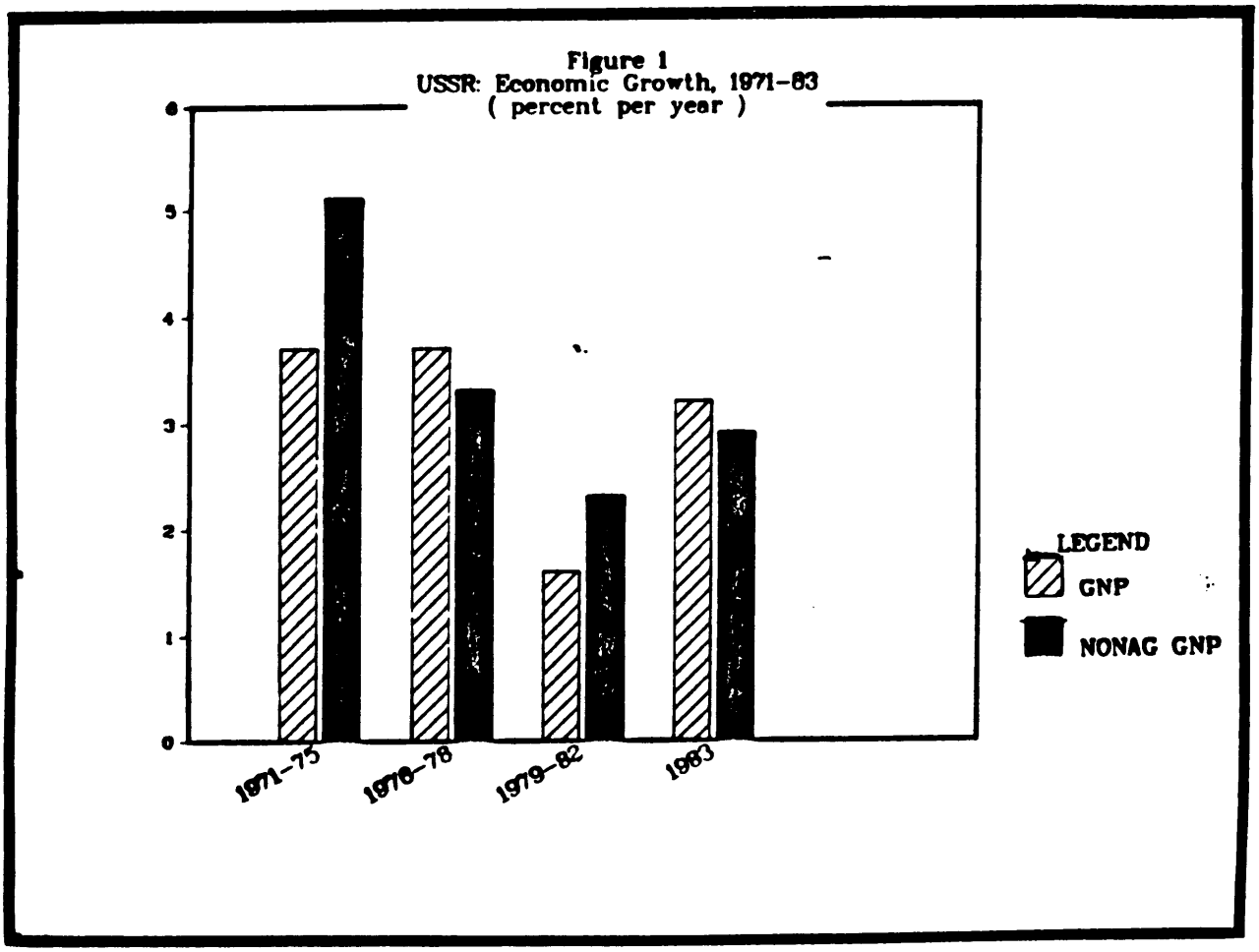
It is natural to ask whether the performance of the Soviet economy in 1983 and so far in 1984 marks the start of a new trend of growth at around 3 percent per year. This would mean a recovery from the rates of 1979-82--some of the slowest since 1950. Our assessment of prospects for future growth depends on:

- Whether our preliminary estimates for 1983 and our early impressions of 1984 hold up as further data become available (see annex).
- Why growth improved in 1983-84.
- Whether the favorable influences on 1983-84 growth are likely to continue. 25X1

Why Did Growth Improve?

When considering Soviet economic growth, it is convenient to separate agriculture from the other sectors, because it is so heavily influenced by weather factors. Growth of GNP outside agriculture was slower in 1976-78 than in 1971-75, and was even slower in 1979-82 (see figure 1). The apparent improvement of growth in 1983 and so far in 1984 could represent either a temporary recovery from the slowdown outside of agriculture in 1976-82 or a more lasting break from the long-term trend of falling growth. To understand the sources of this improvement, we can:

- Identify sectors of the economy and branches of industry in which the improvement was greatest.
- Break down improved growth of output into changes in growth of labor and capital inputs, and changes in productivity. 25X1



Growth Patterns Show Easing of Bottlenecks

The pattern of growth changes by sector and branch is consistent with the findings of earlier research that shortages of basic materials were a major cause of the slowdown in industrial growth.[1] It also suggests that relief of bottlenecks caused by these shortages played a role in the recovery. [redacted] 25X1

All the major producing sectors outside agriculture contributed to the slowdown of growth in 1976-82. The slowdown was less pronounced in services, however, than in industry, construction, transportation, and trade. The recovery of growth in 1983 also spread across the board, except that transportation and services grew slower than their average rates for 1979-82 (see table 1). [redacted] 25X1

Within industry, the most striking changes in growth during both the slowdown and the recovery came from:

- Ferrous metals
- Chemicals
- Wood, pulp, and paper
- Construction materials

Shortages of materials produced by these branches, combined with problems in transportation, led to bottlenecks during the slowdown of growth. It appears likely, therefore, that relief of some of these bottlenecks contributed to the recovery in 1983. Our estimate of little or no growth in military procurement during 1976-82 suggests an attempt to control the military's demand for materials, and this probably also contributed to the easing of some bottlenecks in 1983. [redacted] 25X1

Detailed information about growth so far in 1984 is limited mostly to industry. Average industrial growth is similar to last year's, but the pattern appears to be shifting. This suggests that different bottlenecks are being targeted or that yearly additions to capacity are somewhat uneven. Growth in electric power and wood, pulp, and paper is greater than in the same period of 1983. Growth rates for ferrous metals,chemicals, and construction materials, however, look somewhat lower than at this time last year. A possible factor underlying the generally good performance in industry recently is the strong growth in electric power generation which is so crucial to many industrial processes and operations. Based on six-month performance, growth in other nonagricultural sectors of the economy also seems to be continuing at about last year's rate. [redacted] 25X1

[redacted] 25X1

Table 1
USSR: Patterns of Growth Outside of Agriculture, 1971-84

	Average Annual Rates of Growth (Percent)				
	1971-75	1976-78	1979-82	1983[a/]	1984[b/]
Nonagricultural GNP	5.1	3.3	2.3	2.9	NA
Of which:					
Industry	5.9	3.8	2.4	3.4	3.5
Ferrous Metals	4.0	1.9	-0.3	4.0	1.8
Nonferrous Metals	5.9	2.3	1.8	3.0	4.0
Machinery	7.8	5.4	3.9	3.5	4.1
Chemicals	8.6	4.5	2.6	6.0	4.9
Wood, Pulp, & Paper	2.6	-0.1	-0.1	3.0	4.0
Construction Materials	5.4	3.2	-0.7	3.1	2.8
Construction	5.6	2.9	0.9	3.2	NA
Transportation	6.5	3.7	2.8	2.5	NA
Trade	4.6	3.1	2.1	3.0	NA
Services	3.4	2.6	2.5	2.3	NA

a/ Preliminary

b/ First six months

NA: Not Available

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Productivity Stabilizes

These improvements in output performance are reflections of a complex set of changes. This can be seen by breaking down changes in output growth into changes in growth of:

- Labor inputs--measured as scheduled work hours.
- Capital inputs--measured as capital stock valued at constant prices.
- Overall productivity of combined labor and capital inputs. 25X1

As it is generally used, the term productivity refers to influences on production other than quantities of inputs. These influences--like technology, efficiency, work effort, quality of labor and capital, and managerial skill--are very difficult to measure. Because these influences are not captured in our conventional measures of labor and capital inputs, they are reflected only in our estimates of productivity. Material inputs, which we do not measure directly, also affect our productivity estimates. 25X1

The slowdown of output growth outside of agriculture in 1976-82 resulted from a combination of slower growth of labor and capital inputs and decreases in overall productivity of labor and capital. Most of the improvement of output growth in 1983 appears to have occurred because productivity stabilized rather than because growth of inputs accelerated (see table 2). Relief of bottlenecks and unmeasured increases in work hours probably explain a substantial part of this stabilization of productivity. 25X1

Prior to 1983, input growth in all sectors of the nonagricultural economy--like output growth--slowed from 1971-75 rates, first in 1976-78 and further in 1979-82 (see figure 2). In industry, the slowdown of input growth was particularly sharp for construction materials and for wood, pulp, and paper--two branches where the level of output actually declined. 25X1

Trends in productivity changed even more sharply than trends in inputs. Growth of overall productivity in nonagricultural GNP turned negative in 1976 or shortly afterwards and remained negative, at least through 1982. Factors in the downturn in productivity probably include:

- Supply bottlenecks--shortages of industrial materials, transportation bottlenecks, and power failures idled production at many enterprises.
- Shifts in the composition of investment--increased shares of investment were allocated to extraction of oil and other resources where productivity fell as the best deposits were depleted and expensive technologies were required.

Table 2
USSR: Average Annual Rates of Growth of Output, Inputs and Productivity, 1971-83

Percent

	Labor Inputs				Capital Inputs			
	71-75	76-78	79-82	83	71-75	76-78	79-82	83
Nonagricultural GNP	2.5	1.6	1.1	0.6	7.9	7.0	6.5	6.2
Of which:								
Industry	1.5	1.5	0.8	0.6	8.7	7.9	7.4	6.9
Ferrous Metals	0.1	0.7	0.1	0.3	7.7	7.1	5.5	7.4
Nonferrous Metals	0.1	0.7	0.4	0.0	8.7	7.8	7.5	6.9
Machinery	2.8	1.9	0.6	0.5	10.6	9.9	8.8	7.7
Chemicals	2.2	1.3	0.6	0.6	10.6	8.0	9.7	6.8
Wood, Pulp, & Paper	-0.6	-0.5	-0.5	-0.2	8.3	6.7	6.3	6.3
Construction Matl's	1.4	0.6	0.3	0.4	9.7	7.7	5.5	6.0
Construction	3.1	1.1	0.3	0.0	11.9	8.9	8.7	8.3
Transportation	2.9	2.0	1.6	0.8	7.8	7.0	6.6	6.0

	Outputs				Overall Productivity			
	71-75	76-78	79-82	83	71-75	76-78	79-82	83
Nonagricultural GNP	5.1	3.3	2.3	2.9	0.0	-0.9	-1.3	-0.4
Of which:								
Industry	5.9	3.8	2.4	3.4	0.7	-1.0	-1.8	-0.4
Ferrous Metals	4.0	1.9	-0.3	4.0	-1.0	-2.8	-3.7	-0.9
Nonferrous Metals	5.9	2.3	1.8	3.0	0.5	-2.6	-2.8	-1.2
Machinery	7.8	5.4	3.9	3.5	1.8	0.4	0.0	0.1
Chemicals	8.6	4.5	2.6	6.0	1.4	-0.7	-3.2	1.6
Wood, Pulp, & Paper	2.6	-0.1	-0.1	3.0	-0.5	-2.6	-2.3	0.5
Construction Matl's	5.4	3.2	-0.7	3.1	0.4	-0.5	-3.2	0.2
Construction	5.6	2.9	0.9	3.2	0.2	-0.2	-1.5	1.0
Transportation	6.5	3.7	2.8	2.5	0.4	-1.4	-1.9	-1.5

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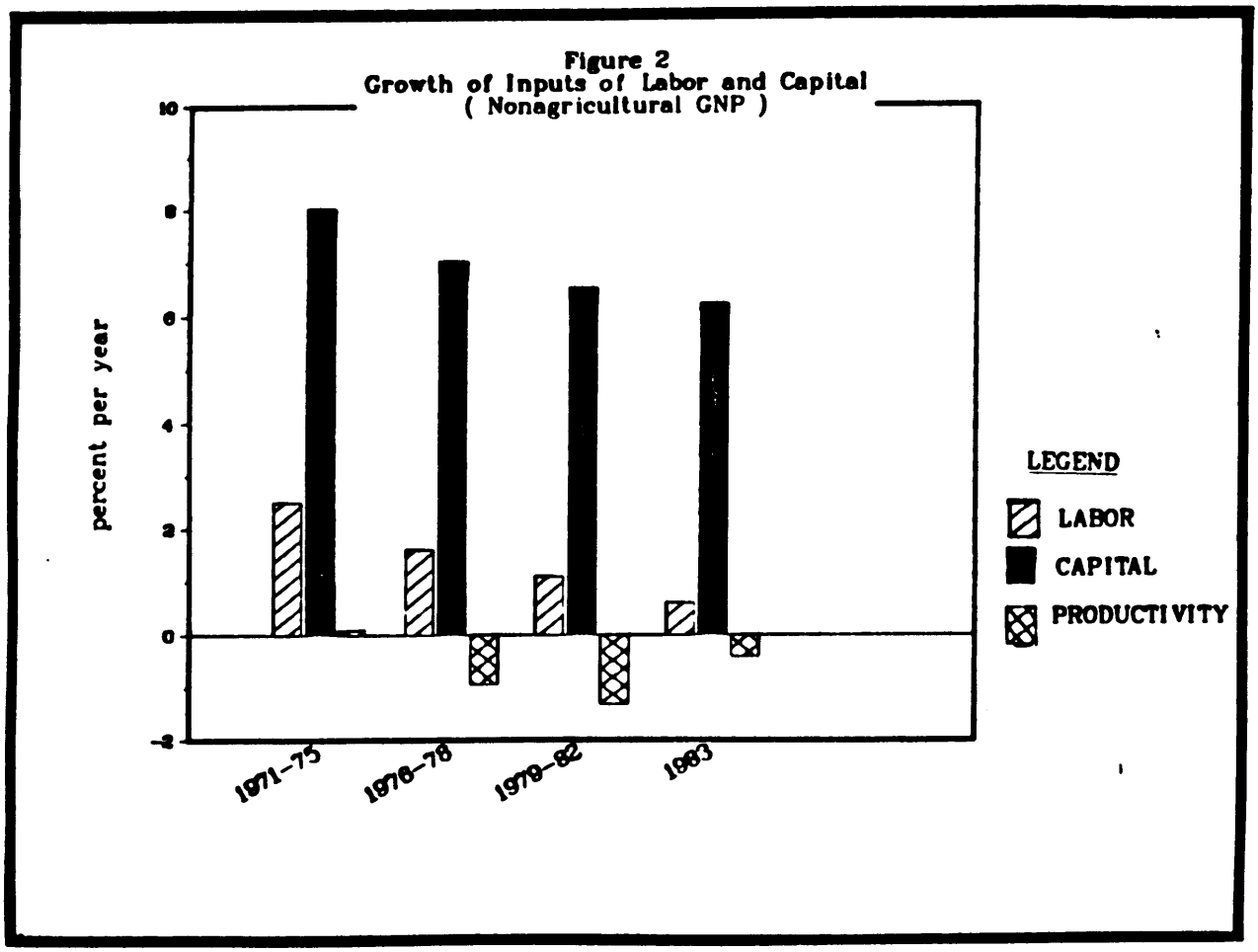

- Lower quality inputs of capital--capital stock aged as growth of investment fell, retirement of old capital slowed, and technological progress lagged.

- Lower quality inputs of labor--as population growth slowed in the European USSR, additions to the labor force came from Asian regions where levels of formal education and job training were lower. [redacted] 25X1

In 1983 for most sectors of the nonagricultural economy the major source of recovery in growth of output was that overall productivity stabilized. In addition, in two branches of industry--wood, pulp, and paper and construction materials--faster growth of capital inputs added to the effect of more favorable changes in productivity. These were two of the branches hit hardest by slower input growth in 1976-82. [redacted] 25X1

But finding that more stable productivity played a major role in the recovery of economic growth leaves unanswered the more important question of why the decline halted. We consider it probable that relief of bottlenecks and unmeasured increases in hours worked by labor explain a large part of the apparent changes in productivity. The changes in productivity in 1983 will be hard to sustain:

- If sources of bottlenecks that developed in 1976-82 were eased, especially by new capacity for problem industries.

- If labor actually worked longer hours that were not reflected in available data on changes in scheduled hours. [redacted] 25X1

In most sectors of the economy, growth of capital inputs in 1983 was not much different from the previous few years. Growth of capital accelerated in 1983, however, in three branches of industry that played key roles in the slowdown of output growth in 1976-82: ferrous metals; wood, pulp, and paper; and construction materials. Shortages of products supplied by these branches likely were among the major causes of the earlier slowdown.[2] Moreover, it is possible that new capacity directed at sources of bottlenecks raised the impact of capital growth on output growth. The easing of other supply bottlenecks--particularly railroads--also may have reduced the time that capital stood idle because of shortages. [redacted] 25X1

A recent statistical adjustment reported by the USSR allows us to size roughly the gain in work hours needed to account for the improvement in output growth. When the government released industrial statistics for January 1984, it published an adjustment for the additional growth due to one more working day in that month than in January 1983. Applying the Soviet adjustment to

[redacted] 25X1

explain the 1 to 1 1/2 percentage point gain in industrial growth last year gives a required increase of roughly 2 percent in hours worked. An increase of this size--about 1 hour per week per worker--would have been within easy reach last year. [redacted] 25X1

Can Growth Continue at About the 1983 Rate?

In our judgment, chances are reasonably good for near-term growth of Soviet GNP to continue at about last year's rate of 3 percent, in the absence of short-term swings in agricultural output.[3] Growth could even exceed 3 percent but probably could do no better than approach, at best, 4 percent per year. The conditions required to sustain annual growth above 3 percent, however, are not likely to prevail for longer than a year or so. [redacted] 25X1

Continued 3-percent GNP growth in the near term probably would have to come from the same sources as the improvement of growth in 1983. Two of the sources we consider important, however, are difficult to sustain over time:

- Relief of supply bottlenecks.
- Increases in hours worked.

After recent favorable influences run out, we can expect a return to the decreases in overall productivity that characterized recent history prior to last year. [redacted] 25X1

In the longer term, assuming swings in agricultural output are not large, prospects for GNP growth will depend on changes in growth strategy such as:

- Higher growth in investment in the machinery sector.
- Faster retirement of obsolete capital.
- Success in conservation of energy and basic materials.
- Continued stability in military procurement.

Soviet economists are now proposing strategy changes, but new strategies would require much time and careful planning to achieve the desired effects. [redacted] 25X1

Uncertainty about future trends in productivity is the primary factor that clouds our outlook for Soviet growth in the near term. Labor and capital growth are fairly well determined by past trends in demographics and

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[3] We do not take short-term agricultural fluctuations into account because our main interest is in more stable influences on economic growth. Fluctuations in agricultural growth are frequent in the USSR, however, and they could cause deviations from the underlying rate of GNP growth. Since the mid 1970s annual growth of GNP has diverged from annual growth of nonagricultural GNP by as much as 1 1/2 to 2 percentage points. [redacted] 25X1

investment that are difficult to alter quickly. From working assumptions about near-term growth of labor and capital inputs, we can estimate the changes in productivity that would be required to achieve certain levels of GNP growth. [redacted] 25X1

Near-term trends in employment can vary only within a fairly narrow range determined by past demographic trends and labor force participation rates. Increases in hours worked could raise growth of labor inputs for a few years, but worktime cannot continue to rise indefinitely. Growth of labor inputs in the near future almost certainly will not exceed the rates observed since 1979--a little less than 1 percent per year. [redacted] 25X1

Like labor inputs, capital inputs have grown more slowly since 1979--around 6 1/2 percent per year. Investment growth picked up in 1981-83, however, after falling sharply in 1979-80. If investment continues to grow at its 1981-83 rates or somewhat faster, in a few years growth of capital inputs possibly could approach the rates of 1976-78--about 7 percent. [redacted] 25X1

Trends in productivity, on the other hand, are subject to wider variation than trends in inputs because productivity reflects a greater variety of underlying influences. We can examine, however, the near-term linkage between productivity growth and prospects for GNP (figure 3).[4] [redacted] 25X1

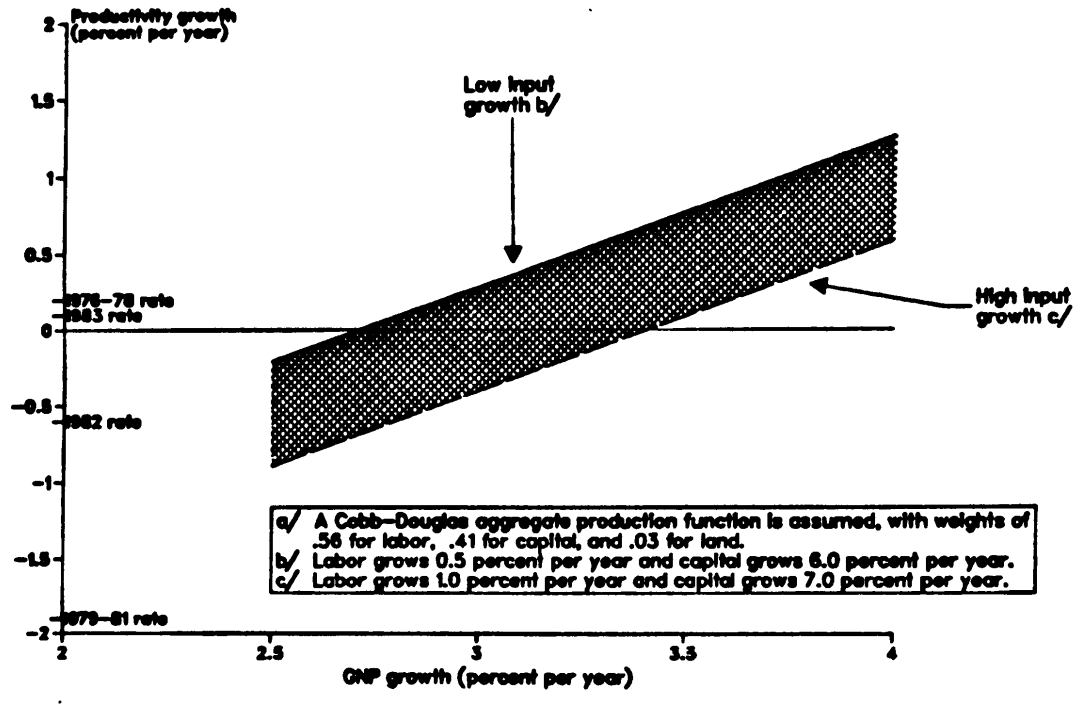
Given input growth tending toward the high end of the range we consider likely, annual growth of GNP could be 3 percent or even a little higher for another year or so, assuming normal growth in agriculture. With labor growth constrained by demographic trends, however, this would require:

- Productivity to remain about stable.
- Or capital inputs to grow faster than in 1983, with the rates of 1976-78 probably setting a rough upper limit.
- Or some combination of improved growth in overall productivity and capital inputs.

But productivity gains and capital growth needed to permit GNP to grow as fast as 4 percent per year are not very likely. The next year or two, then, could see the Soviet economy continue to grow around the 3 percent a year rate of the last 18 months, but a recovery to the higher rates of the sixties or early seventies appears remote indeed. [redacted] 25X1

[4] A Cobb-Douglas aggregate production function is assumed, with weights of .56 for labor, .41 for capital, and .03 for land. [redacted] 25X1

Figure 3
Near-Term Linkage Between Overall Productivity Growth and GNP Growth a/



a/ A Cobb-Douglas aggregate production function is assumed, with weights of .56 for labor, .41 for capital, and .03 for land.
b/ Labor grows 0.5 percent per year and capital grows 6.0 percent per year.
c/ Labor grows 1.0 percent per year and capital grows 7.0 percent per year.

Annex: Did Growth Really Improve in 1983-84?

Our preliminary estimates of Soviet economic growth are updated and revised routinely as further data become available. Both before and after revision, our estimates are somewhat lower than official Soviet measures, which we estimate to be overstated, largely because of disguised inflation.[5] Gaps between official measures and our estimates have narrowed, however, as growth slowed in the 1970s. 25X1

The uncertainties associated with our preliminary estimates of economic growth in 1983 are greater than usual. Revisions usually reduce preliminary estimates of industrial growth by drawing on a larger sample with less emphasis on products that grow faster than average. Because the gap between preliminary estimates for industry and official Soviet measures has become very narrow since about 1982, revisions could lower estimates for 1983 more than usual. But we expect even the revised estimates of 1983 growth to show some improvement over growth in 1982. 25X1

The narrowed gap between our preliminary estimates and official Soviet measures has at least two possible explanations. The one we consider unlikely is that the government may be distorting official statistics for political purposes. Revisions of early official data for 1982 did seem larger than usual. Early data released by any statistical agency are subject to revision, however, when more and better information becomes available. And the major reform of industrial prices that took effect in January 1982 almost certainly made the measurement of some data series more difficult than before the reform. 25X1

Instead of distortion, we prefer an explanation based on problems of deriving our estimates from official Soviet data:

- The reform of Soviet industrial prices in January 1982 probably lowered official growth rates relative to our estimates. Official value data on total industrial output are now being reported in 1982 prices, and preliminary figures on official growth rates for branches of industry probably also use 1982 prices. Products with rapidly growing outputs and falling prices--such as autos--would have less impact on average growth, the more recent the prices used. This would tend to lower official growth rates relative to our estimates, which are based to a large extent on quantities for a sample of products valued at 1970 prices.

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5 See the papers by John Pitzer and Ray Converse in US Congress, Joint Economic Committee, USSR: Measures of Economic Growth and Development, 1950-80 (Washington: US Government Printing Office, 1982, pp 13, 198-200). 25X1

- The sample of products and services used for our preliminary estimates is smaller than in the past because of the trend for fewer data series to be reported by the Soviets. Poor growth may be a reason for dropping products, but we can only assume in our estimates that the excluded products grow at the same average rate as those still reported.

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